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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/057,903	01/29/2002	Lawrence Wilcock	1509-260	3686

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EXAMINER

MICHALSKI, JUSTIN I

ART UNIT	PAPER NUMBER
2644	9

DATE MAILED: 05/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/057,903

Applicant(s)

WILCOCK, LAWRENCE

Examiner

Justin Michalski

Art Unit

2644

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 2/19/2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-31 is/are rejected.
- 7) ☒ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-3, 5, 6, 8-10, 12-14, 16, 18-20, 22-24, 26, and 28-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schmandt ("Audio Hallway: a virtual Acoustic Environment for Browsing," 1998, UIST, San Francisco, CA).

Regarding Claim 1, Schmandt discloses an audio user-interfacing method in which items are represented in an audio field by corresponding synthesized sound sources from where sounds related to the items appear to emanate (Schmandt discloses rooms with files (i.e. files represent sources) arrayed in front of the users head where up to four files play simultaneously based on the angle of rotation of the head) (Figure 5 and Page 167, Column 2, paragraph 2), the method including the steps of: (a) allocating the sound sources to groups (i.e. rooms) such that each group comprises multiple sound sources (Schmandt discloses 6 to 20 files in a room) (Page 167, Column 2, paragraph 2); and (b) un-muting each group of sound sources in turn for a limited

period with the groups other than the un-muted group being at least partially muted (Schmandt discloses up to three stories (i.e. rooms or group) can be heard simultaneously; the closest story dominates one ear (i.e. others partially muted) and the next two stories, guaranteed to be on the other side of the hallway, are heard in front and behind the user on the other side of the hall) (page 166, column 2, paragraph 3) by automatically and cyclically changing the audibility of the sound sources of a particular group (Figure 2 discloses automatically and cyclically changing the audibility or sound sources (i.e. audio files) associated with a particular group (i.e. room).

Regarding Claim 2, Schmandt further discloses logically grouping a cluster of audio files (i.e. sound sources) (Page 164, column 2, paragraph 3).

Regarding Claim 3, Schmandt further discloses grouping the sound sources in virtual rooms (i.e. positions) in the audio field (Page 167, Column 2, paragraph 2).

Regarding Claim 4, Although Schmandt does not explicitly disclose sound sources are allocated to the groups by a user, it would have been obvious to one of ordinary skill in the art at the time the invention was made that a user (i.e. human) would have had to be involved in order to allocate sources to groups ,

Regarding Claim 5, Schmandt further discloses that 6 to 20 individual files (i.e. sound source) are placed each room (i.e. it's own group) (Page 167, column 2, paragraph 2).

Regarding Claim 6, Schmandt further discloses up to three stories can be heard simultaneously; the closest story (i.e. room or group) dominates one ear (i.e. exception and left un-muted while other) and the next two stories, guaranteed to be on the other

side of the hallway, are heard in front and behind the user on the other side of the hall (i.e. partially muted) (page 166, column 2, paragraph 3).

Regarding Claim 7, Although Schmandt does not explicitly disclose including adjusting, by a user, the duration of said limited period, it would have been obvious to one of ordinary skill in the art at the time the invention was made that a user (i.e. human) would have had to adjusted the duration of the limited period.

Regarding Claim 8, Schmandt further discloses cross fading the group whose limited period of being un-muted is ending with the group whose period of being unmuted is next to occur (Figure 2 discloses cross fading of audio).

Regarding Claim 9, Schmandt further disclose a method wherein each group is associated with a respective audio-field reference relative to which the sound sources of the group are positioned, independently moving the audio-field references relative to a presentation reference (user's head) which is determined by a mounting configuration of audio output devices used to synthesize said sound sources (Schmandt discloses position sensor on headphones (Page 169, paragraph 1) which can move sounds by tilting head forward and back (Page 166 , Column 2, paragraph 1).

Regarding Claim 10, Schmandt further discloses the system containing a position sensor mounted on headphones (Page 169, Column 1, paragraph 1) allowing the user to navigate by changing head position and therefore world stabilized.

Regarding Claim 12, Schmandt discloses an apparatus for providing an audio user interface in which items are represented in an audio field by corresponding synthesized sound sources from where sounds related to the items appear to emanate

Art Unit: 2644

(Schmandt discloses rooms with files (i.e. files represent sources) arrayed in front of the users head where up to four files play simultaneously based on the angle of rotation of the head) (Figure 5 and Page 167, Column 2, paragraph 2), the apparatus comprising: storage means for storing data concerning the sound sources (Schmandt discloses PCs (Paragraph bridging pages 168 and 169), this data including grouping data associated sound sources (Schmandt discloses 6 to 20 files (i.e. sources) in a room) (Page 167, Column 2, paragraph 2) into groups (i.e. rooms), each with multiple sound sources; rendering-position determining means for determining, for each of said sound sources, an associated rendering position at which the sound source is to be synthesized to sound in the audio field (Schmandt discloses head position is gained from a head sensor mounted on the headphones) (Page 169, Column 1, paragraph 1); audibility-determining means for determining means being arranged to automatically and cyclically change the audibility of the sound sources for un-muting each group of sound sources in turn for a limited period with the groups other than the un-muted group being at least partially muted (Schmandt discloses up to three stories (i.e. room or group) can be heard simultaneously; the closest story dominates one ear (i.e. others partially muted) and the next two stories, guaranteed to be on the other side of the hallway, are heard in front and behind the user on the other side of the hall) (page 166, column 2, paragraph 3); and rendering means, including audio output devices, for generating an audio field in which said sound sources are synthesized at their associated rendering positions and with audibility as determined by said audibility-determining means (Schmandt discloses headphones) (Page 169, Column 1, paragraph 1).

Regarding Claim 13, Schmandt further discloses logically grouping a cluster of audio files into rooms (i.e. sound sources) (Page 164, column 2, paragraph 3).

Regarding Claim 14, Schmandt further discloses grouping the sound sources in virtual rooms (i.e. positions) in the audio field (Page 167, Column 2, paragraph 2).

Regarding Claim 15, Although Schmandt does not explicitly disclose a user input arrangement for enabling a user to allocate the sound sources to groups, it would have been obvious to one of ordinary skill in the art at the time the invention was made that a user (i.e. human) would have to allocate the sound sources to groups.

Regarding Claim 16, Schmandt further discloses that 6 to 20 individual files (i.e. sound source) are placed each room (i.e. it's own group) (Page 167, column 2, paragraph 2).

Regarding Claim 17, Although Schmandt does not explicitly disclose a user input arrangement for enabling a user to adjust the duration of said limited period, it would have been obvious to one of ordinary skill in the art at the time the invention was made that a user (i.e. human) would have to set or adjust the duration of said limited period.

Regarding Claim 18, Schmandt further discloses cross fading the group whose limited period of being un-muted is ending with the group whose period of being un-muted is next to occur (Figure 2 discloses cross fading of audio).

Regarding Claim 19, Schmandt further discloses the rendering-position determining means comprises: means for setting the location of each of said sound sources relative to an audio-field reference (Schmandt discloses audio spatialization software (page 169, lines 1-2) and head position sensor mounted on headphones (page

169, column 1, paragraph 1); means for controlling an offset between the audio field reference and a presentation reference (position sensor and spatialization software), the presentation reference being determined by a mounting configuration of the audio output devices (headphones); and means for deriving the rendering position of each sound source based on the location of the sound source in the audio field and said offset (position sensor mounted on headphones).

Regarding Claim 20, Schmandt further discloses the system containing a position sensor mounted on headphones (Page 169, Column 1, paragraph 1) allowing the user to navigate by changing head position and therefore world stabilized.

Regarding Claim 22, Schmandt discloses an apparatus for providing an audio user interface in which items are represented in an audio field by corresponding synthesized sound sources from where sounds related to the items appear to emanate (Schmandt discloses rooms with files (i.e. files represent sources) arrayed in front of the users head where up to four files play simultaneously based on the angle of rotation of the head) (Figure 5 and Page 167, Column 2, paragraph 2), the apparatus comprising: a data store for storing data concerning the sound sources (Schmandt discloses PCs) (paragraph bridging pages 168 and 169), this data including grouping data associating sound sources in groups (i.e. rooms, Page 166, column 2) of multiple sound sources (i.e. files located in rooms); a rendering-position determining arrangement (Schmandt discloses audio spatialization software (page 169, lines 1-2) and head position sensor mounted on headphones (page 169, column 1, paragraph 1) to determine the audibility of each sound source based on its group , the audibility-determining arrangement being

further arranged to automatically and cyclically change the audibility of the sound sources (Figure 2 discloses automatically and cyclically changing the audibility of sound sources (i.e. audio files) associated with a particular group (i.e. room) such as to un-mute each of sound sources in turn for a limited period with the groups other than the un-muted group being at least partially muted (Schmandt discloses up to three stories (i.e. room or group) can be heard simultaneously; the closest story dominates one ear (i.e. others partially muted) and the next two stories, guaranteed to be on the other side of the hallway, are heard in front and behind the user on the other side of the hall) (page 166, column 2, paragraph 3); and a rendering subsystem, including audio output devices (i.e. headphones), arranged to generate an audio field in which said sound sources are synthesized at their associated rendering positions and with audibility as determined by said audibility-determining arrangement (i.e. position sensor and headphones).

Regarding Claim 23, Schmandt further discloses logically grouping a cluster of audio files into rooms (i.e. sound sources) (Page 164, column 2, paragraph 3).

Regarding Claim 24, Schmandt further discloses grouping the sound sources in virtual rooms (i.e. positions) in the audio field (Page 167, Column 2, paragraph 2).

Regarding Claim 25, Although Schmandt does not explicitly disclose a user input arrangement for enabling a user to allocate the sound sources to groups, it would have been obvious to one of ordinary skill in the art at the time the invention was made that a user (i.e. human) would have to allocate the sound sources to groups.

Regarding Claim 26, Schmandt further discloses that 6 to 20 individual files (i.e. sound source) are placed each room (i.e. it's own group) (Page 167, column 2, paragraph 2).

Regarding Claim 27, Although Schmandt does not explicitly disclose a user input arrangement for enabling a user to adjust the duration of said limited period, it would have been obvious to one of ordinary skill in the art at the time the invention was made that a user (i.e. human) would have to set or adjust the duration of said limited period.

Regarding Claim 28, Schmandt further discloses cross fading the group whose limited period of being un-muted is ending with the group whose period of being un-muted is next to occur (Figure 2 discloses cross fading of audio).

Regarding Claim 29, Schmandt further discloses the rendering-position determining means comprises: a setting arrangement for setting the location of each of said sound sources relative to an audio-field reference (Schmandt discloses audio spatialization software (page 169, lines 1-2) and head position sensor mounted on headphones (page 169, column 1, paragraph 1); a control arrangement for controlling an offset between the audio field reference and a presentation reference (position sensor and spatialization software), the presentation reference being determined by a mounting configuration of the audio output devices (headphones); and a deriving arrangement for deriving the rendering position of each sound source based on the location of the sound source in the audio field and said offset (position sensor mounted on headphones).

Regarding Claim 30, Schmandt further discloses the system containing a position sensor mounted on headphones (Page 169, Column 1, paragraph 1) allowing the user to navigate by changing head position and therefore world stabilized.

4. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schmandt as applied to claim 1 above in view of McKiel, Jr. (US Patent 6,046,722). Schmandt as modified discloses an apparatus as stated apropos of claim 1 above. Schmandt does not disclose the sound sources are audio labels and selection means. McKiel, Jr. discloses a method for selection a graphic element (i.e. label) displayed on a computer screen which is identifiable by audio signals to help blind or visually impaired users to select the objects (Column 3, lines 28-52). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include audio-labels to help visually impaired users select an object based on sound rather than on sight.

5. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schmandt as applied to claim 12 above in view of McKiel, Jr. (US Patent 6,046,722). Schmandt discloses an apparatus as stated apropos of claim 12 above. Schmandt does not disclose the sound sources are audio labels and selection means. McKiel, Jr. discloses a method for selection a graphic element (i.e. label) displayed on a computer screen which is identifiable by audio signals to help blind or visually impaired users to select the objects (Column 3, lines 28-52). Therefore, it would have been obvious to

one of ordinary skill in the art at the time the invention was made to include audio-labels to help visually impaired users select an object based on sound rather than on sight.

6. Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schmandt as applied to claim 22 above, and further in view of McKiel, Jr. (US Patent 6,046,722). Schmandt discloses an apparatus as stated apropos of claim 12 above. Schmandt does not disclose the sound sources are audio labels and selection means. McKiel, Jr. discloses a method for selection a graphic element (i.e. label) displayed on a computer screen which is identifiable by audio signals to help blind or visually impaired users to select the objects (Column 3, lines 28-52). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include audio-labels to help visually impaired users select an object based on sound rather than on sight.

Response to Arguments

7. In regards to applicants argument, page 12, item (2), the office agrees with the applicant that the sounds of a braided audio stream are rendered as a single sound source. The office in this action; however, is interpreting the group of multiple sound sources (i.e. room viewed from hallway) (Pages 166-176) not as a plurality of sources where sounds appear to emanate *directly* but rather a grouping comprising of sound sources (i.e. audio files in room) from where sounds appear to emanate.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Justin Michalski whose telephone number is (703)305-5598. The examiner can normally be reached on 8 Hours, 5 day/week.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bill Isen can be reached on (703)305-4386. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JIM


XU MEI
PRIMARY EXAMINER